

REMARKS

Claims 1-92 were previously pending in the subject application. Applicant has amended claims 1-5, 10-11, 13, 15-16, 24-30, 40, 43-46, 54, 57-60, and 63-64 and has cancelled claims 68-92. Accordingly, claims 1-67 are now pending in the subject application. No new matter has been added.

Applicant will sequentially address various issues raised by the Examiner.

Election/Restriction Requirement under 35 U.S.C. §121

The Examiner argues that claims of Group I (claims 1-67), claims of Group II (claims 68-75), and claims of Group III (claims 76-92) are drawn to distinct inventions and has required election of one of Group I, Group II, and Group III for further prosecution. Applicant hereby elects to prosecute the claims of Group I (claims 1-67) without traverse. Applicant has cancelled claims of Group II and Group III (claims 68-92) without prejudice or disclaimer of the subject matter contained therein.

Claim Rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a)

Claims 1-4, 6-14, 24-30, 33-62, and 64 stand rejected under 35 U.S.C. §102(b) and/or 35 U.S.C. §103(a) in view of BRYANT (U.S. Patent No. 5,366,801) and TANAKA (U.S. Patent No. 5,153,066). Applicant respectfully traverses the rejections with respect to claims 1-4, 6-14, 24-30, 33-62, and 64. Nonetheless, in an effort to expedite the prosecution of the subject application, amendments have been entered to more fully distinguish over the prior art of record. In addition, various amendments have been entered for clarification or consistency.

Independent claim 1 recites a multi-component fiber that comprises “a fiber body formed from a plurality of elongated members, at least one of the elongated members comprising a polymeric phase change material having a transition temperature in the range of 22°C to 40°C.”

Independent claim 1 includes a number of limitations that are not shown or suggested by the prior art of record, taken either individually or in combination. For instance, Applicant’s review of the prior art of record did not identify any teaching directed to a multi-component fiber that comprises “a polymeric phase change material having a transition temperature in the range of 22°C to 40°C.” While BRYANT makes reference to a phase change material, this reference

does not show or suggest “a polymeric phase change material having a transition temperature in the range of 22°C to 40°C,” much less a multi-component fiber that comprises such “polymeric phase change material.” TANAKA makes reference to a thermally color-changeable material but fails to show or suggest a “polymeric phase change material having a transition temperature in the range of 22°C to 40°C.” For these reasons, the prior art of record can neither anticipate nor render obvious the invention defined by independent claim 1.

Claims 2-9 depend from independent claim 1 and are allowable for at least the reasons set forth above for independent claim 1. With respect to dependent claim 2, the prior art of record fails to show or suggest that “the transition temperature of the polymeric phase change material is in the range of 22°C to 28°C.”

Independent claim 10 recites a multi-component fiber that comprises “a first elongated member comprising a first polymeric material and a first temperature regulating material dispersed within the first polymeric material.” The multi-component fiber also comprises “a second elongated member comprising a second polymeric material and a second temperature regulating material dispersed within the second polymeric material, wherein the second elongated member is joined with the first elongated member.”

Independent claim 10 includes a number of limitations that are not shown or suggested by the prior art of record, taken either individually or in combination. For instance, independent claim 10 has been amended to include limitations of previously pending claim 15, which depends from independent claim 10. The Examiner has objected to claim 15 as being dependent upon a rejected base claim and has indicated that it would be allowable if rewritten in independent form. Thus, Applicant submits that independent claim 10 is in a condition for allowance.

Claims 11-23 depend from independent claim 10 and are allowable for at least the reasons set forth above for independent claim 10.

Independent claim 24 recites a multi-component fiber that comprises “a core member comprising a temperature regulating material dispersed therein, wherein the temperature regulating material comprises a phase change material having a transition temperature in the range of -5°C to 125°C and a plurality of microcapsules that contain the phase change material.” The multi-component fiber also comprises “a sheath member surrounding the core member.”

Independent claim 24 includes a number of limitations that are not shown or suggested by the prior art of record, taken either individually or in combination. For instance, Applicant's review of the prior art of record did not identify any teaching directed to a multi-component fiber that comprises "a core member comprising a temperature regulating material dispersed therein, wherein the temperature regulating material comprises a phase change material having a transition temperature in the range of -5°C to 125°C and a plurality of microcapsules that contain the phase change material." While BRYANT makes reference to coating individual fibers, this reference does not show or suggest a multi-component fiber that comprises "a core member comprising ... a phase change material having a transition temperature in the range of -5°C to 125°C and a plurality of microcapsules that contain the phase change material." TANAKA makes reference to a temperature-sensitive color-changeable composite fiber but fails to show or suggest a multi-component fiber that comprises "a phase change material having a transition temperature in the range of -5°C to 125°C and a plurality of microcapsules that contain the phase change material." For these reasons, the prior art of record can neither anticipate nor render obvious the invention defined by independent claim 24.

Claims 25-39 depend from independent claim 24 and are allowable for at least the reasons set forth above for independent claim 24.

Independent claim 40 recites a fiber that comprises "at least one inner member extending through substantially the length of the fiber and comprising a blend of a first polymeric material and a temperature regulating material, wherein the temperature regulating material comprises a phase change material having a transition temperature in the range of 22°C to 40°C, and wherein the phase change material is selected from the group consisting of solid/solid phase change materials and polymeric phase change materials." The fiber also comprises "an outer member surrounding the inner member and forming the exterior of the fiber, wherein the outer member comprises a second polymeric material."

Independent claim 40 includes a number of limitations that are not shown or suggested by the prior art of record, taken either individually or in combination. For instance, Applicant's review of the prior art of record did not identify any teaching directed to a fiber that comprises "at least one inner member extending through substantially the length of the fiber and comprising a blend of a first polymeric material and a temperature regulating material, wherein the temperature regulating material comprises a phase change material having a transition

temperature in the range of 22°C to 40°C.” While BRYANT makes reference to coating individual fibers, this reference does not show or suggest a fiber that comprises “at least one inner member ... comprising ... a phase change material having a transition temperature in the range of 22°C to 40°C.” TANAKA makes reference to a temperature-sensitive color-changeable composite fiber but fails to show or suggest a fiber that comprises “a phase change material having a transition temperature in the range of 22°C to 40°C.” For these reasons, the prior art of record can neither anticipate nor render obvious the invention defined by independent claim 40.

Claims 41-53 depend from independent claim 40 and are allowable for at least the reasons set forth above for independent claim 40. With respect to dependent claim 47, the prior art of record fails to show or suggest that “the inner member comprises two or more different temperature regulating materials.”

Independent claim 54 recites a core/sheath fiber that comprises “a core member positioned within and extending through substantially the length of the fiber, wherein the core member comprises a blend of a first polymeric material and a phase change material, wherein the first polymeric material has a partial affinity for the phase change material, such that the phase change material forms a plurality of domains dispersed within the first polymeric material.” The core/sheath fiber also comprises “a sheath member forming the exterior of the fiber and surrounding the core member, wherein the sheath member comprises a second polymeric material.”

Independent claim 54 includes a number of limitations that are not shown or suggested by the prior art of record, taken either individually or in combination. For instance, Applicant’s review of the prior art of record did not identify any teaching directed to a core/sheath fiber that comprises “a core member positioned within and extending through substantially the length of the fiber, wherein the core member comprises a blend of a first polymeric material and a phase change material, wherein the first polymeric material has a partial affinity for the phase change material, such that the phase change material forms a plurality of domains dispersed within the first polymeric material.” While BRYANT makes reference to coating individual fibers, this reference does not show or suggest a core/sheath fiber that comprises “a core member ..., wherein the core member comprises a blend of a first polymeric material and a phase change material.” And, BRYANT does not show or suggest that “the first polymeric material has a partial affinity for the phase change material, such that the phase change material forms a

plurality of domains dispersed within the first polymeric material.” TANAKA makes reference to a temperature-sensitive color-changeable composite fiber but fails to show or suggest a core/sheath fiber that comprises “a blend of a first polymeric material and a phase change material, wherein the first polymeric material has a partial affinity for the phase change material, such that the phase change material forms a plurality of domains dispersed within the first polymeric material.” For these reasons, the prior art of record can neither anticipate nor render obvious the invention defined by independent claim 54.

Claims 55-59 depend from independent claim 54 and are allowable for at least the reasons set forth above for independent claim 54. With respect to dependent claim 59, the prior art of record fails to show or suggest that “the core member comprises a blend of the first polymeric material and at least two different phase change materials.”

Independent claim 60 recites an island-in-sea fiber that comprises “a plurality of island members positioned within and extending through substantially the length of the fiber, wherein each of the island members is separated from one another and comprises a blend of an island polymeric material and a temperature regulating material, wherein the temperature regulating material comprises a phase change material having a transition temperature in the range of 22°C to 40°C.” The island-in-sea fiber also comprises “a sea member forming the exterior of the fiber and surrounding each of the island members, wherein the sea member comprises a sea polymeric material.”

Independent claim 60 includes a number of limitations that are not shown or suggested by the prior art of record, taken either individually or in combination. For instance, Applicant’s review of the prior art of record did not identify any teaching directed to an island-in-sea fiber that comprises “a plurality of island members positioned within and extending through substantially the length of the fiber, wherein each of the island members is separated from one another and comprises a blend of an island polymeric material and a temperature regulating material, wherein the temperature regulating material comprises a phase change material having a transition temperature in the range of 22°C to 40°C.” While BRYANT makes reference to coating individual fibers, this reference does not show or suggest an island-in-sea fiber that comprises “a plurality of island members ..., wherein each of the island members ... comprises ... a phase change material having a transition temperature in the range of 22°C to 40°C.” TANAKA makes reference to a temperature-sensitive color-changeable composite fiber but fails

to show or suggest an island-in-sea fiber that comprises "a phase change material having a transition temperature in the range of 22°C to 40°C." For these reasons, the prior art of record can neither anticipate nor render obvious the invention defined by independent claim 60.

Claims 61-67 depend from independent claim 60 and are allowable for at least the reasons set forth above for independent claim 60.

In conclusion, Applicant respectfully submits that the prior art of record fails to teach or suggest the structure or implementation of the invention recited in the claims of the subject application and, thus, that the prior art of record cannot, as a matter of law, anticipate the claimed invention under 35 U.S.C. §102(b) or render obvious the claimed invention under 35 U.S.C. §103(a). Applicant, therefore, respectfully requests withdrawal of the rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a).

Summary

For the reasons set forth above, Applicant respectfully submits that the subject application is in a condition for allowance. An early notice of allowance is, therefore, earnestly requested.

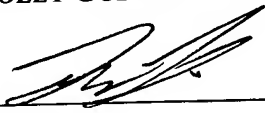
If in the opinion of the Examiner a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned at (650) 843-5852.

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